

# Acoustic Deterrent Systems:

Testing new technologies for Asian carp prevention and control



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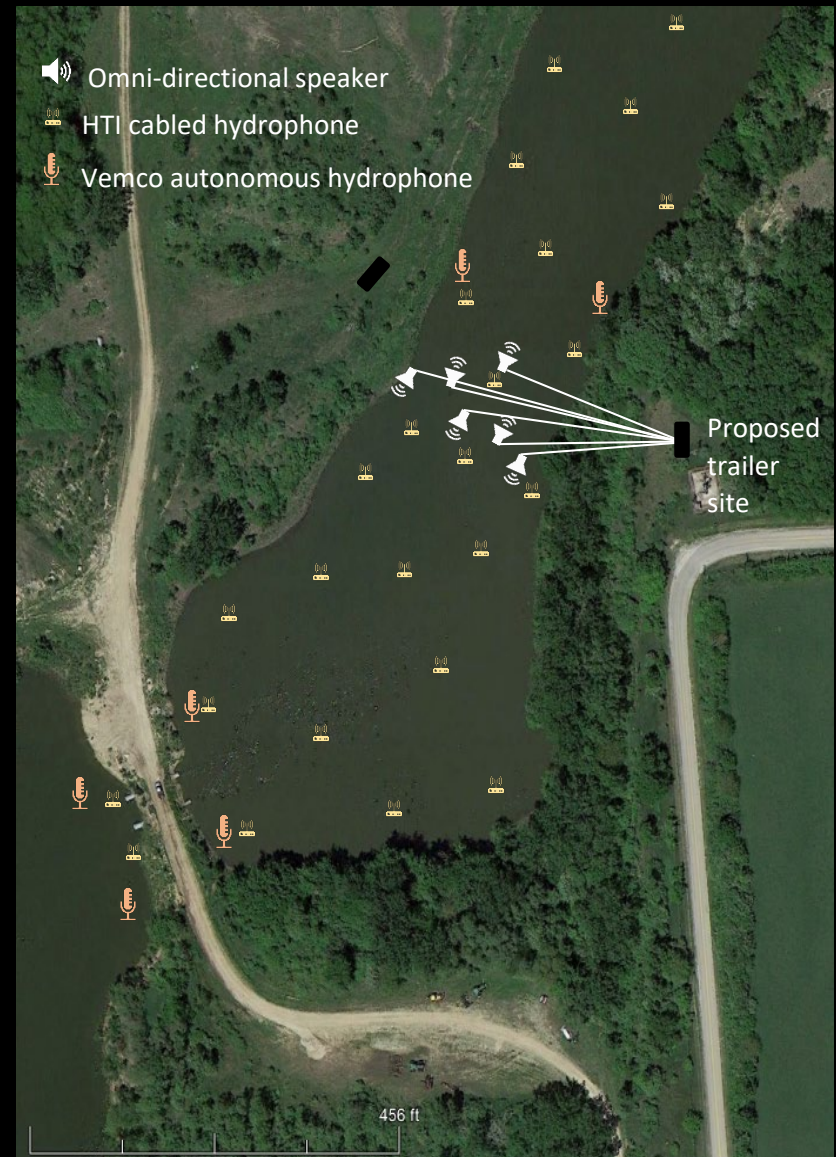
# Testing New Acoustic Stimuli

- Tested additional sounds at USGS CERC ponds with USACE ERDC, USGS UMESC & USGS CERC
  - 5 trials in four ponds completed.
  - Data analysis and summary progressing and will be completed by January 2020 with a product in summer 2020.
  - Additional acoustic playbacks are still being screened by USACE ERDC



# Testing New Acoustic Stimuli

- Study to test new acoustic playbacks in the Wabash River at West Lafayette, IN was cancelled (due to site access issues)
- New study plan developed for Morris, IL to begin set-up mid-October 2019
- Initial test will occur in December 2019
- Additional fish tagging and testing will commence in spring 2020 and continue for up to 2 yrs



# 2019 Actions: Acoustic Deterrents

- Complete second deployment of Acoustic Deterrent System (ADS) in the CAWS (at request of ACRCC)
- Finish summarizing data from 2018 pond studies and determine if further refinement is necessary
- Complete ADS testing in the Illinois River (to replace Wabash River study)
- Finish initial round of new playback tests at ERDC
- Evaluate system **tests** at Barkley Lock and Lock and Dam 19

# Large-scale Field Tests Underway

Barkley Lock and Dam



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ABC News is at Kentucky.

August 1 · 🌐

FISH OUT OF WATER: Hundreds of Asian carp seen jumping from Lake Barkley in Kentucky as biologists work to study the invasive species in hopes of slowing its spread.

Wildlife officials used a technique called 'electrofishing' to temporarily stun the fish.

<https://abcn.ws/2K9MurL>

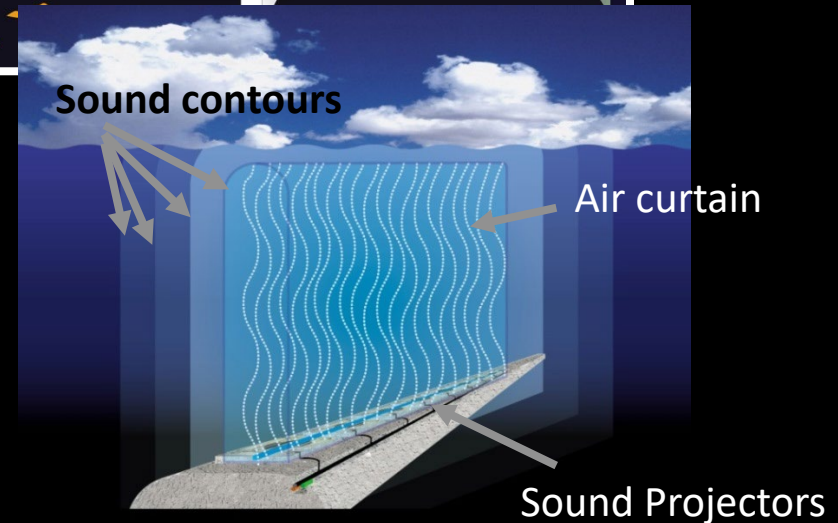
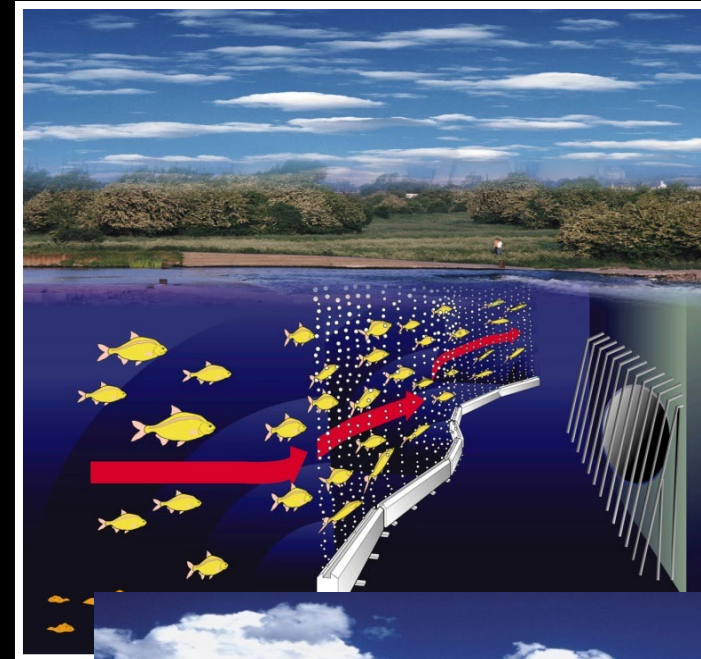
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2.5K Comments 4.7K Shares

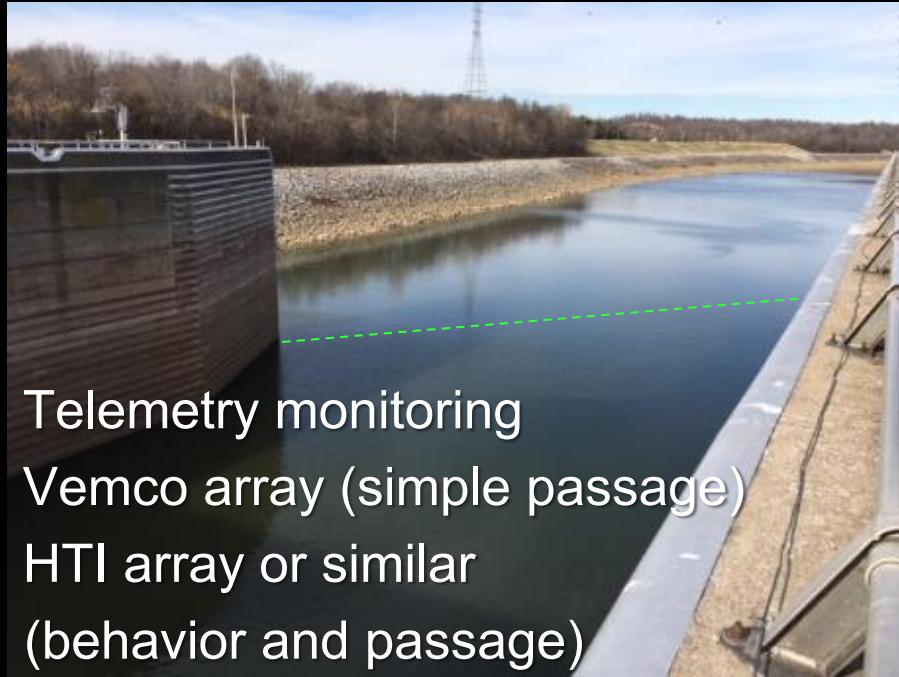


# BioAcoustic Fish Fence (BAFF)

- BAFF developed by Fish Guidance Systems (FGS)
- System evaluated by University of Minnesota
- Uses proprietary sound signal that is introduced into a bubble curtain
- Produces a confined 'wall of sound' enabling fish to be *guided* to a bypass or trap
- Utilizes sound projectors, compressed air, and lights



# Barkley BAFF Deployment & Evaluation



- Telemetry monitoring
- Vemco array (simple passage)
- HTI array or similar (behavior and passage)
- ARIS and hydroacoustics gear deployed to collect ancillary data
- 150 silver carp already tagged; another 350 tags planned Oct-Feb.





**Danger**

**High  
Water**





# Surveillance video shows moment storm hit Moors Resort and Marina

By Leanne Fuller Jun 25, 2019

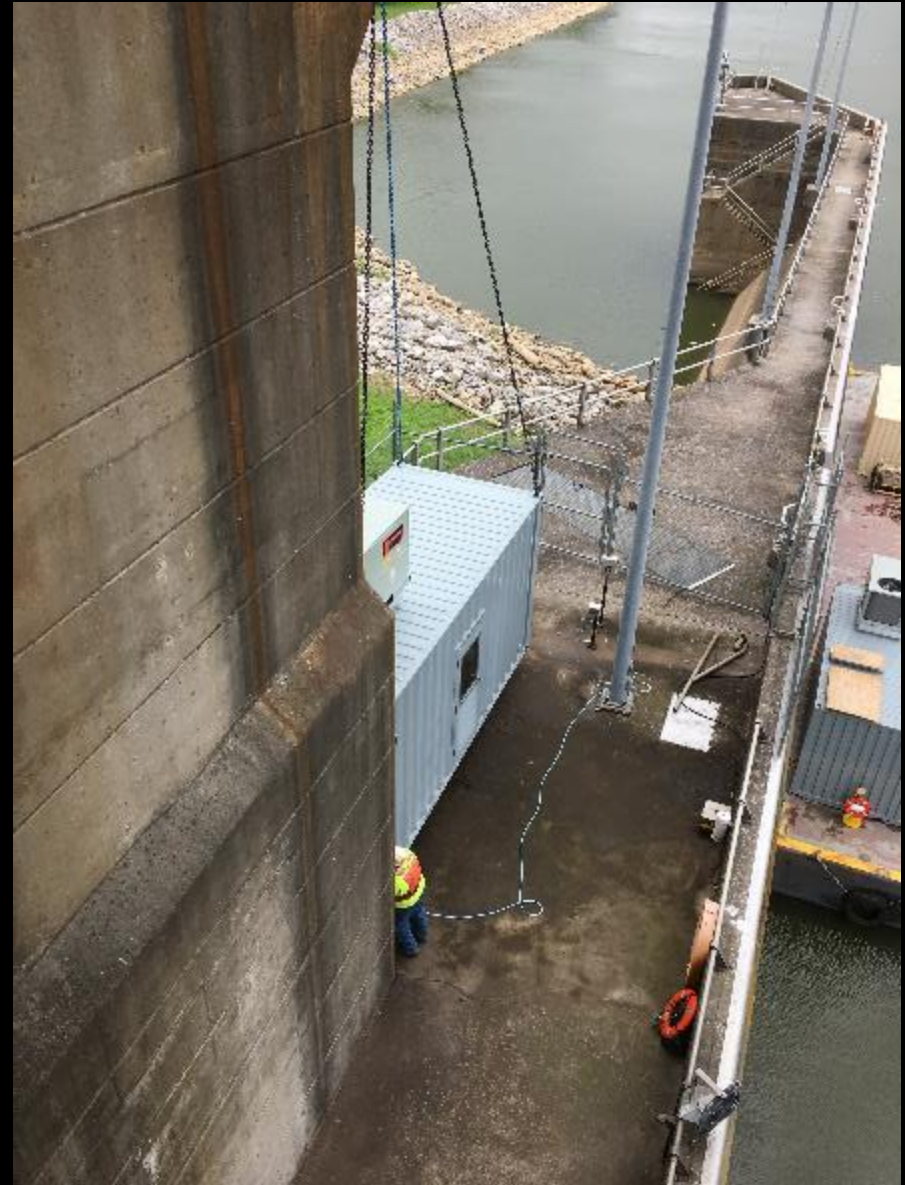
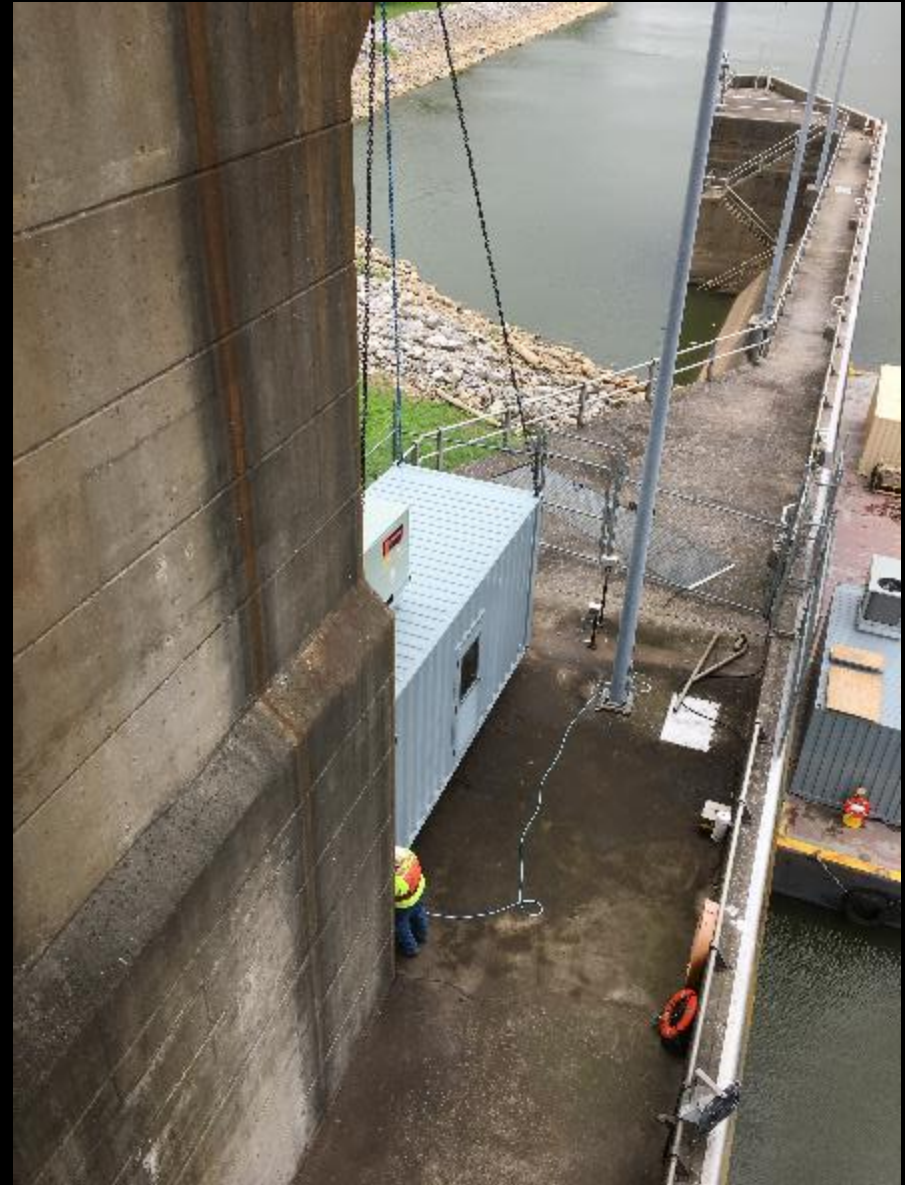


## WEATHER

Currently in Paducah  
**90°F** ☀️ Su











# Lock and Dam 19

## Acoustic Deterrent System (ADS)

- Multi-agency team finalized study plan in September
- Permitting and design/engineering is just beginning.
- Deployment slated for December 2020 – March 2021



# Lock and Dam 19

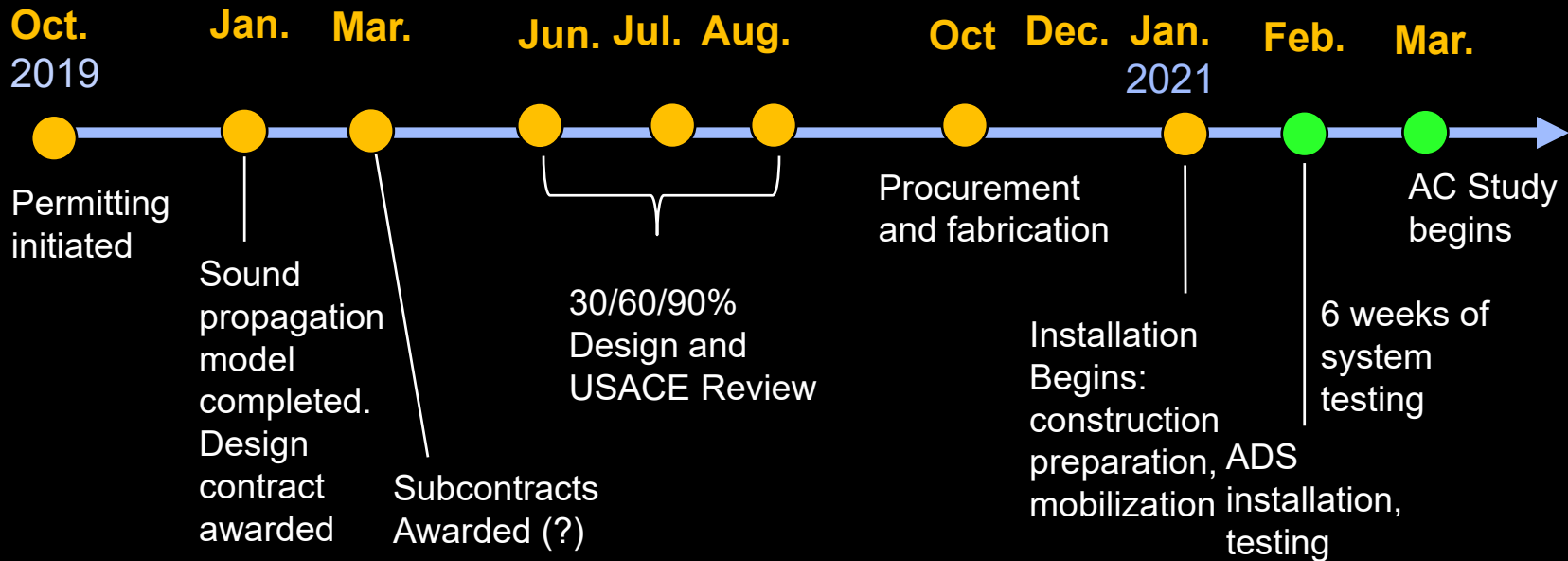
## Acoustic Deterrent System (ADS)

- Acoustic propagation model and preliminary data collection to be completed in 2019.
- 3 years of fish passage data have been collected and summarized to inform deterrent placement and operation



# LD19 ADS Deployment

## Draft Timeline





# Questions?

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